

WHAT IS CLAIMED IS:

1           1.       An optical switching system, the optical switching system comprising:  
2           an optical cross-connect, the optical cross connect having a plurality of  
3       mechanical switching devices, each of the switching devices being capable of deflecting a  
4       light beam from an input port to an output port;  
5           a communication interface bus coupled to the optical cross-connect;  
6           a first routing module coupled to the communication interface bus, the first  
7       routing module comprising a route forwarding table; and  
8           a second routing module coupled to the communication interface bus, the second  
9       routing module being adapted to provide a redundant process for the first routing module,  
10       the second routing module being adapted to receive a copy of a portion of the route  
11       forwarding table from the first routing module during a time period that the first routing  
12       module is active while the second routing module is in a standby state.

1           2.       The system of claim 1 wherein the first routing module comprises an IP  
2       address.

1           3.       The system of claim 1 wherein the second routing module comprises at  
2       least an IP address that is the same as the IP address from the first routing module only  
3       when the second routing module is in an active state.

1           4.       The system of claim 1 wherein the route forwarding table is provided in  
2       random access memory, the random access memory comprising at least 128 MB.

1           5.       The system of claim 4 wherein the random access memory has a read  
2       access time of less than thirty nanoseconds.

1           6.       The system of claim 1 wherein the first routing module and the second  
2       routing module are each coupled to a hub.

1           7.       The system of claim 1 wherein the first routing module further comprises a  
2       route database, the route database comprising random access memory.

1           8.       The system of claim 7 wherein the route database is dynamic.

1           9.       An optical switching system having a redundant route control for out of  
2       band communication interface, the optical switching system comprising:

3 a optical cross-connect having a plurality of mechanical switching devices, each  
4 of the switching devices being capable of deflecting a light beam from an input port to an  
5 output port in an in-band communication interface;

6 a communication interface bus coupled to the optical cross-connect;

7 a first routing module coupled to a first network connection for an out of band  
8 communication interface, the first routing module also coupled to the communication  
9 interface bus; and

10 a second routing module coupled to a second network connection for an out of  
11 band communication interface, the second routing module also coupled to the  
12 communication interface bus, the second routing module being adapted to provide a  
13 redundant process for the first routing module;

14 wherein the out of band communication interface is free from an interaction with  
15 the in-band communication interface such that the out of band communication interface  
16 communicates through an alternative path from the in-band communication interface.

1 10. The system of claim 9 wherein the first routing module comprises a route  
2 forwarding table and wherein the second routing module adapted to provide a redundant  
3 process for the first routing module, the second routing module adapted to receive a copy  
4 of the route forwarding table from the first routing module during a time period that the  
5 first routing module is active.

1 11. In an optical switching system, a method for providing redundant out of  
2 band communication, the method comprising:  
3 receiving an update of information from a network;  
4 calculating route information based upon the update of information;  
5 updating route forwarding information based upon the route information in  
6 a first volatile memory location; and  
7 updating route forwarding information based upon the route information in  
8 a second volatile memory location.

1 12. The method of claim 11 wherein the receiving and calculating are  
2 provided in a first routing module.

1           13.     The method of claim 11 wherein the updating the second volatile memory  
2     location is provided in a second routing module, the second routing module being a  
3     backup to the first routing module.

1           14.     The method of claim 11 wherein updating the first volatile memory  
2     location and updating the second volatile memory location are provided at about the same  
3     time.

1           15.     The method of claim 11 wherein the updating the second volatile memory  
2     location is provided while a first routing module comprising the first volatile memory  
3     location is active.